

THE INTERCHANGE

SEPTEMBER, 1985

DEPARTMENT OF HIGHWAYS' EMPLOYEES' NEWSLETTER

"SOFT CAPS" ON THEIR WAY

Soft caps will replace hardhats on many heads around Montana beginning this fall.

Part of the newly released *Safety Policies and Procedures Manual* for Highways employees is a section on the use of orange caps "where there is no exposure to head injury."

The caps should be available in early October, according to Jerry Toner, Chief of the Safety and Training Bureau. They will be furnished by the Department where their use can be justified under the new policy.

The soft caps or baseball-type caps will probably be most useful for surveyors, truck drivers and others who need the visibility of an orange hat, but have trouble working with a hardhat on.

Hardhats must still be worn where there is danger of head injury from flying or falling objects or electrical or chemical hazard. Specific guidelines and examples are listed in the new Policy Manual.

A handful of other states have implemented similar policy changes. Oklahoma, Nebraska and California are examples. Nebraska noted in their department newsletter, the *Roadrunner*, "few tears will be shed over the fact."

A HISTORY LESSON FOR ADULTS

Long before anyone dreamed of an internal combustion engine or a horseless carriage, a man named Sir Isaac Newton was busy discovering laws of the universe. Laws of motion, to be precise. Of course, he didn't know it at that time, but Sir Isaac's principles would come to explain what happens when people use automobiles. You see, in describing his principles of motion, Newton was also describing the principles of crash dynamics.

Newton published his three famous laws in the 17th century, harolding a major milestone in human civilization. Together they accounted for the movement of every planet, ocean, river, stream and overripe apple that ever fell from a tree. They still explain what happens to discarded candy wrappers and return tennis serves; not to mention aircraft, skateboards and the automobile. Yet in 1980, almost 35,000 Americans

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TWO TOUGH JO'S show the latest in Highway headgear. Left, Jo Schmitz, Information Unit, wears the traditional orange hardhat. Right, Jo Eschler, Director's Office, sports the new orange "soft cap". (see story, this page)

NEWS FROM THE FAR CORNERS . . .

An editorial appeared recently in the *Great Falls Tribune* describing the Montana Highway Department's shift in emphasis from road building on the interstate system to the two-lane primary and secondary roads. As examples, the writer points to work on Highway 200 through the middle of the state, US-2 across the "Hi-Line" and US-87 from Great Falls to Havre. "This is not to say that all the critically needed work on primary and secondary highways will be undertaken soon," according to the writer, "But the immense task is underway—and that's good for Montana motorists."

The *Hungry Horse News* reported "finishing touches are being added to US Highway 2 through Columbia Falls." Assistant Construction Supervisor Larry Brazda was quoted in the story about possible penalties on the contractor because the fall 1984 deadline for the chip seal coat was not met.

Ernie Dygart and Bruce Baxter of Missoula were caught in the act recently by *The Missoulian*. A photo appeared recently of the men doing grading work for an additional 2 lanes on Highway 93 north of Missoula. The project is a welcome one in the Missoula area.

The award of the largest-ever primary highway construction contract in Montana was big news in Sidney. The million-dollar-a-mile Sidney-Fairview reconstruction project went to contract in August, after some delay due to right-of-way problems. It was funded in large part by the State's Reconstruction Trust Fund, a state-funded program designed to address the needs on Montana's ailing primary system.

Interstate 90 became a landing strip temporarily when a Wyoming pilot ran low on fuel just east of the Idaho border. "Montana Department of Highways personnel directed traffic until the pilot could refuel and escorted the craft as it taxied for a take off" according to the *Spokane Spokesman-Review*. Who said highway work is boring?

Opening of the Mondak bridge near Fairview was an occasion for reflection. "The bridge is a symbol that no longer is any state an island, but a link" according to North Dakota Governor George Sinner as quoted in the *Williston Daily Herald*. "The Mondak bridge is a monument to agriculture and tourism. . . but most of all to community." The bridge connects rural communities on both sides of the border (see related story, p.4).

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LET'S HEAR IT

For years it was the *Centerline*. Now it's the *Interchange*, but the idea is the same: The Montana Department of Highways is a big organization and it's hard to communicate and keep in touch with so many employees. A newsletter can help.

If you've got suggestions or ideas about how or what should be communicated in the newsletter, let us know. There is no guarantee your ideas will be used, but we will definitely try. Call or write Jo or Dennis in the Information Unit, Helena; phone 444-6200.

HISTORY LESSON (continued)

died while riding in passenger vehicles, apparently believing themselves immune to the laws of physics.

Crash dynamics are what happens to the vehicle and its contents in a collision. A crash involves two separate collisions, really. First the car hits an object, a tree, perhaps, or another moving car, and comes to an abrupt stop. That's called the first collision, and at 30 mph, it will stop the car in 1/10 of a second.

The first one can be expensive, alright, but the real problem is what follows. You see, 1/50 of a second after the car stops moving, so do its contents.

In a crash, unbelted passengers will fly toward the point of impact, colliding with anything in their path—hostile objects like dashboards, windshields, steering wheels and worse. This one is called the second or human collision, and it can be a real killer.

The name of the game is to remain one with the car seat, because if you are in an accident, the safest place to be is inside the car. In a crash, forces of impact can hurl bodies right through the windshield or heave them out the doors or windows. Airborne, people maintain momentum as they sail, and while it's treacherous enough to smash into a dashboard or windshield, it's murder to be "thrown clear."

Thrown clear of what? Oncoming traffic, when you're too injured to get up and run? Telephone poles or trees? Rough lacerating cement surfaces? Passengers launched from the car in a collision are 25 times more likely to die.

Still not convinced? Well, you know how dangerous motorcycle accidents are, don't you? Motorcyclists suffer a fatality rate almost 8 times that of automobile occupants and motorcyclists are thrown clear of their vehicles nearly every time!

But, what's that you say? What about fires or submersion in a lake or river? The truth about those cliffhangers is far less dramatic than television would have you believe. Accidents involving fire or submersion make up less than 1/2 of 1% of all traffic accidents. That's less than 1 in 200, but the idea of being trapped in a burning or sinking car is pretty scary, so let's look at it realistically: Assuming you were not ejected, you will, nonetheless, ricochet about the occupant compartment before the car comes to rest. Now, the only way to escape from a burning or sinking automobile, obviously, is to remain conscious, with few broken bones and without any hemorrhaging gashes. After all, how can you bolt from a burning vehicle if you're relying on the

floor with a fractured skull?

If Sir Isaac was alive today, he'd be charmed by the novel inventions which have grown out of his three laws of motion. The phenomenon of the automobile would fill him with pride, but the miracle of weaving together fibers with enough strength to hold back thousands upon thousands of pounds? Ah, that one would fill him with awe.

You know what he'd probably say about safety belts if he were still alive? He'd probably say, "What the heck? You paid for 'em. You might as well use 'em." (Article adapted from USDOT)

MINORITIES GET HANDS-ON EXPERIENCE

Twenty-five men and women received some valuable "hands-on" experience at a recent training session conducted by the Anaconda Indian Alliance near Anaconda, Montana.

The five-day session for minorities was part of a Supportive Service Contract with the Montana Department of Highways.

"The idea of the program is to give some basic background so that people starting out in trainee positions won't be caught completely flat-footed," according to Bob McElderry, Disadvantaged Business Enterprise Program Manager for the Department. "These people now have a much better idea what to expect when they get on the job."

Instruction covered everything from the role of unions and non-traditional employment to operation of a D-6 Cat and water truck. Participants also worked with maps and blueprints and surveying equipment.

Swan and Sons Construction of Opportunity, Montana assisted the Anaconda Indian Alliance with much of the instruction and equipment. Union and government representatives rounded-out the roster of speakers.

Two days of the five-day program involved "hands-on" experience at Swan and Sons Construction yard. The trainees also got a close-up look at ongoing construction on the massive Basin-Elk Park interstate construction project north of Butte, Montana, a hot plant and lay-down operation and an airport construction project.

He said the program was "extremely successful." One of the participants was employed in a construction-related job before completing the program and two others were employed within two weeks of completing the training, he said. Coordinators of the Supportive Service Contract expect a placement rate of 50% by fall.

REMEMBER

Tragedy struck on August 19, just two years ago. Baron "Skip" Gray, a Department of Highways Equipment Operator in Alberton, was attempting to remove the lid from an empty paint barrel. Although he took precautions, the arc welder ignited fumes in the barrel the instant it touched the lid, exploding the barrel into Gray's head and body. He never regained consciousness and died 30 hours later.

The following is excerpted from a poem written by Gray's family. It is printed here as a reminder of the human costs of accidents.

It's over, Skip is gone, and He's not to return,
His work and accomplishments are all done
and his bridges he burned.

He's up with his Maker, and there he will stay.

It's lonesome without him, it's lonesome today.

Mankind, yes, has lost a very kind and concerned young man,

Our life here without him will not be the same.

Sherry, Lance and Tawny Gray

GLENDIVO REPORTS

by Patty Zimmerman

Governor Ted Schwinden made a trip to Wolf Point July 1st to present a Certificate of Appreciation to Larry Rhoads, recently retired Maintenance Superintendent for the Wolf Point division. Larry received an Incentive Award for designing a new, cost-saving reflectorized hazard marker for wooden bridges.

The Glendive District Construction Bureau went back in time about 50 years by deciding to put down a road mix pavement on the approaches for the new Powder River bridge at Broadus. The job was too short to justify moving in a hot plant. Acting Project Manager Joe Schneidt was puzzled over oil quantities and the thoroughness of drying and mixing, but the first lift is down and is looking good. No one is sure if this means road mix surfacing will stage a comeback.

The new addition on the Glendive office is complete and the moving process began August 13th. We have a beautiful conference room and five additional offices. The unfinished basement will probably be full before we know it. Those who got the new offices were really excited to get into them. Many others were like kids when big brother moved away from home—anxious to take over his old room.

Although we want to keep him modest, we have to admit we were very proud of our District Engineering Services Supervisor, Andy Anderson, for receiving the Outstanding Performance Award from Lieutenant Governor Turman on July 10 in Helena.

"Congratulations, Andy!"



THE COUNTRY'S ROADS ARE GETTING MORE ATTENTION than ever before this season. Above, a "paving train" rips up cracked pavement, re-works it and lays it back down again in an experimental "cold recycling" project on Rogers Pass. 1985 is the biggest construction season ever at the Montana Department of Highways. A great big THANKS goes out to everyone in the Department for the hard work and long hours it took to put it all together.

MISSOULA DISTRICT NEWS

by Jacquie Wichman

Carl Dehne, Personnel Specialist, and Belle Weatherwax, Accounting Clerk, have both left the District office staff to pursue their teaching careers. Carl is now with the Albion School District and Belle will teach in Briggs, Idaho.

Several retirees have been reemployed in order to staff our construction program for this busy season. They are Harvey Gould, Don Mittelstadt, Walt Liles and George and Gerald Roat. Gould and Gerald Roat are working in the Kalispell area.

Teri Dipasquale of the Kalispell office and Cyle Wold of the Communications Bureau were wed on August 7, 1985. A reception for Teri and Cyle was held at the Blacktail Inn in Lakeside.

The 15th Annual Western Highway Golf Tournament was held at the Meadow Lake Golf Course in Columbia Falls August 3rd and 4th. Forty-two men and 13 women participated in the tourney. Winners were:

Championship Flight	1st	Ed Zemljak—Butte Helen Yarnall—Butte
	2nd	Dennis Foy—Missoula Helen Gryde—Polson
	3rd	Jim Mitchell—Missoula Bev Anderson—Helena
1st Flight	1st	Wayne Gryde—Polson Rose Skoog—Helena
	2nd	Gerry Charlton—Helena Fern Johnson—Missoula

	3rd	Les Sodja—Helena Margaret Burke—Missoula
2nd Flight	1st	Jim Hahn—Missoula Lou Charlton—Helena
	2nd	Chuck Strong—Lewistown Jean Myers—Missoula
	3rd	Marlin Brackney—Great Falls Cory Butzlaff—Kalispell
3rd Flight	1st	Jack Colvin—Butte
	2nd	Chuck Klimper—Billings
	3rd	Howard Stockwell—Kalispell
4th Flight	1st	Jim Weaver—Missoula
	2nd	Ed Foy—Kalispell
	3rd	Bob Johnson—Missoula

Howard Stockwell, Dennis Foy and Bill Hebert anticipate an even larger turnout next year.

Hebert, former Maintenance Chief at Kalispell, underwent heart surgery recently. He is presently recovering at St. Patrick's Hospital in Missoula.

Darryl Wilson, Right-of-Way Agent, recently got a "pat on the back" for his work. An attorney wrote Director Wicks, "He (Wilson) has been firm in protecting the rights of the State of Montana, but he has also been receptive to listening to the requests of my client and went the "extra mile" in trying to satisfy her needs while meeting the needs of the state."

Wilson also received letters of appreciation from Bureau Chief Jack Ricker, Director Wicks and Governor Schwinden.

WHY A HIGHWAY DEPARTMENT?

by Duane Meiers,
Billings District Engineer

To answer the question "Why a Highway Department?" I would like to point out a few thoughts from Alvin Toffler's book, *Future Shock*. He notes that in 1914 a typical American traveled about 1640 miles per year or about 88,560 miles during their lifetime. Today the average American automobile owner drives 10,000 miles per year and it has been estimated that several million human beings have covered 3 million miles or more during their lifetime.

In 1967 for instance, 108 million people took 360 million trips involving an overnight stay more than 100 miles from their home. These trips alone accounted for 312 billion passenger miles. This does not take into account any of the traffic for business and work or trips to the grocery store.

Our society is very travel oriented. Viewed another way, passenger miles traveled within the United States have been increasing six times faster than the population for at least 25 years. As long as automobiles are being made and the means to operate them is at hand, a highway program is necessary to maintain an orderly transportation system.

Montana has over 5 billion vehicle miles of travel per year on Federal Aid Systems. Of this total, approximately 70% is generated on state highways; 30% on local roads and streets.

The Department is charged with providing the road system for the State of Montana. Not only is construction a function of the Department, but also maintenance of this system and its continual upgrading.

Included in this maintenance is the need for load limits during springtime so the system may be better preserved and the investment safeguarded from unusual stress and depreciation.

The Department carries on a program of determining needs and establishing priorities to survey, design, and construct the needed improvements to keep our system up to date and advancing as fast as finances will permit.

Five districts are organized to carry out the programs on a local level under the guidance and policies of the Central Office in Helena. Handling problems on a local level makes the Department responsive to the needs of the public.

Many different skills and occupations are gathered in the Department to bring about the development of the programs and schedules; accountants, statisticians, computer programmers, typists, equipment operators, engineers, architects, photographers and many more.

Bringing together these disciplines toward a common goal is one of the big projects of the Highway Department.

FAR CORNERS (continued)

"Highway Work Smooooooths Out Whitefish", according to a headline in the *Whitefish Pilot*. "Although they have caused long strings of traffic to be backed up through the traffic lights in downtown Whitefish," the *Pilot* notes, "highway resurfacing projects on both edges of Whitefish will soon leave smiles in their wake." Five miles of Highway 93 is being resurfaced.

Going-to-the-Sun Road in Glacier Park was designated a National Historic Civil Engineering Landmark, according to the Browning *Glacier Reporter*. The road, completed in 1933, was the first major trans-mountain scenic highway in the US, establishing engineering principles for future roads in national parks.

"Although they can't tell the color of the car or whether the driver is left or right handed, the traffic counters set up around Belgrade can provide an amazing amount of information about the vehicles driving over them," according to the Belgrade *High Country, Independent Press*.

Phil Colbert of the Traffic section in Helena explained that the counters measure traffic volume and type of traffic and can also be set up to measure traffic speed. Colbert said unusual traffic or activity can also be identified, such as someone jumping up and down on the counter hose, a car parked on the hose or a fire or other activity in the area.

Dozers worked 24 hours a day, according to a story in the Lewistown *News Argus*, to replace a collapsed culvert on US-87 south of Grassrange. The culvert, installed in 1939, was 135 inches in diameter and was covered by 40 feet of fill. Traffic was detoured around the area for over a week as crews worked to replace the damaged culvert.

RETIREMENTS

Employees who have recently retired with over 30 years of service with the Department include: Robert L. Keck, Helena, 41 years, 11 months; Rodney L. Phillips, Great Falls, 34 years, 4 months; Willard M. Kramlich, Great Falls, 32 years, 2 months; Gilbert A. Paulson, Glendive, 31 years, 5 months; and Joseph Matkovic, Butte, 30 years, 1 month. Recent retirees with 20-30 years of service include: John Colvin, Butte, 27 years; George E. Ulrich, Billings, 25 years, 2 months; Albert E. Haacke, Missoula, 24 years; and Stanley (Swede) E. Jensen, Bozeman, 23 years, 8 months. Other employees who have recently retired are Dean Brown, Plains, 19 years, 11 months; John E. Kittilson, Helena, 18 years, 4 months; Alvin T. Gorr, Clyde Park, 15 years, 8 months; Gloria D. White, Helena, 14 years, 2 months; Raymond F. Bozman, Helena, 7 years, 9 months; Robert E. McCauley, Helena, 5 years, 11 months; and Robert K. Hume, Fort Benton, 4 years, 6 months.

HISTORIC BRIDGES

Bridge renovation and replacement got a big boost with the 1982 Surface Transportation Assistance Act. The results of the stepped-up bridge program are beginning to show across Montana and a new chapter in Montana's transportation history is being written.

Literally dozens of smaller and off-system bridges are being replaced, but several of the big bridges are getting some attention, too. Contract bids will be opened September 26 for the Missouri River Bridge on Montana 16 south of Culbertson. The huge truss bridge will be replaced with a sleek, girder-type bridge.

Just downstream is the Missouri River Bridge at Wolf Point, a similar structure scheduled to be replaced in 1987. The Wolf Point Bridge was erected in 1930, the first built across the Missouri between Fort Benton, Montana and Williston, North Dakota. The three main spans are "riveted Pennsylvania through trusses". The longest, a 400 foot span, is by far the longest in Montana.

One of the most colorful bridges in Montana was closed to traffic in August. The Snowden Bridge near Fairview, Montana was built in 1913 for rail traffic. It has an impressive 300 foot lift span, since it was built at a time when the Missouri River was navigable. The span was lifted straight up by gasoline engines so that steamboats could pass under.

When completed, it was the longest vertical

lift bridge in existence and had the second largest clear opening of all moveable bridges in the world.

In 1925, the Snowden Bridge was equipped with a ramp and planking to accommodate motor vehicles and was operated as a toll bridge by the Great Northern Railroad. By 1943, the railroad was looking for help to run the toll operation, but the bridge was "off-system" and the only toll bridge in the state. The Montana Highway Commission could offer no help.

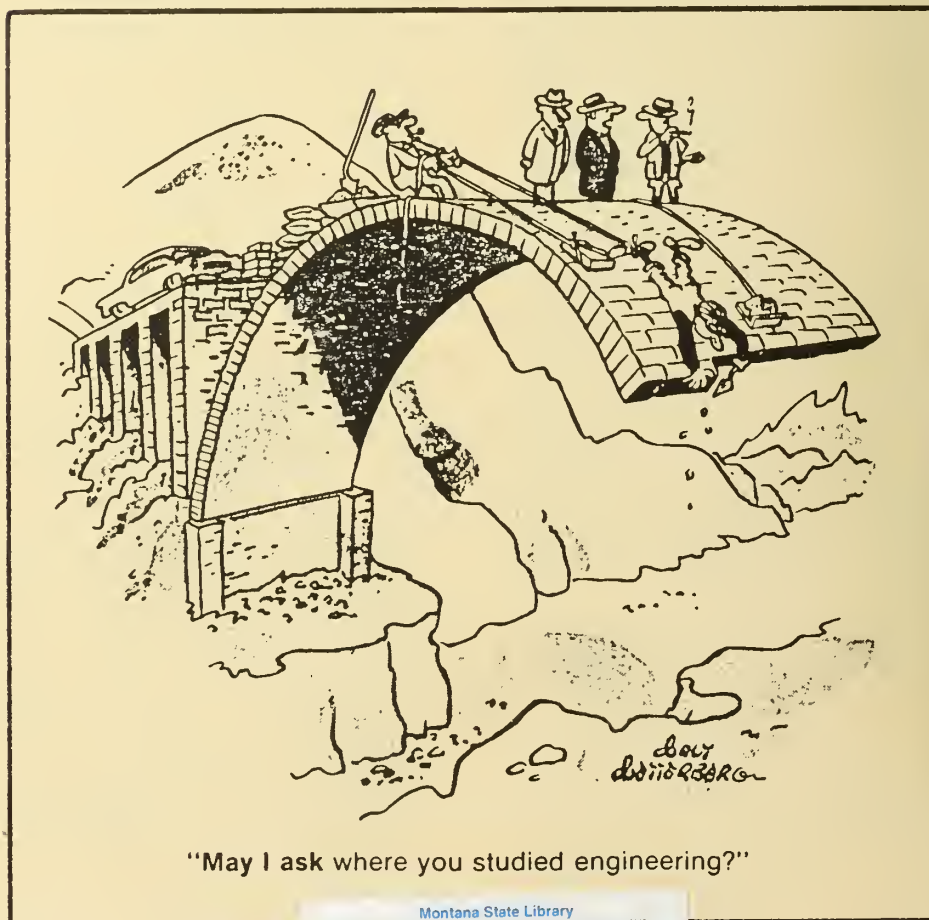
Sometime after 1950, traffic signals were installed and the toll operation was abandoned.

In 1978, discussions between Montana and North Dakota resulted in a preliminary engineering study. A suitable site was chosen just inside the North Dakota border even though the road serves mostly Montana traffic.

The cost of the new bridge was shared by North Dakota and Montana. The contract was let in 1984 and the new Mondak Bridge was opened to traffic August 15.

Many people will never forget the impressive Snowden Bridge it replaces, nor will they likely forget their first trip across the narrow single-lane bridge that carried nearly every type of motor vehicle travelling both directions and freight trains as well.

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"May I ask where you studied engineering?"

Montana State Library

